

## Preview Sheet for Test 2

### Theories of Chemical Bonding and Structure

Chapters 10 and 11; Lectures from 10/1 through 10/22; Problem Sets 4, 5, and 6

The test will be on Wednesday, October 27. You may start as early as 8:00 a.m. All test-taking must end by 9:30 a.m. (to make room for Prof. Inada's Biochemistry class).

#### Studying strategies:

- Do extra problems at the ends of the chapters. If you do not have access to the solution for a given problem, please come talk with me to check your work.
- Focus on your lecture notes and homework first, then look at the textbook.
  - Expect significant coverage of VSEPR and diatomic MO theory. Remember that you are responsible for all shape names for steric numbers 2, 3, and 4.
  - Expect lighter coverage of hybridization. You are expected to know the hybridization schemes used for all steric numbers from 2 to 6 (see Silberberg's Table 11.1 (p. 398)).
  - You must be an expert at drawing Lewis structures (including resonance structures) to do well on this test!
  - There will be no nomenclature questions!
- The format will be the same as Test 1: one page of multiple-choice questions, two pages of problem solving, and a longer essay question of your choice.
- If a topic was not covered in homework or in lecture, you are not responsible for it!

#### Instructions before starting the test:

1. Your exam booklet should have **seven** pages total, with questions on pages 2-5, extra space to work on p. 6, and a periodic table of electronegativities and other reference data on p. 7. Check to see you have seven pages now. If you do not, ask for another copy of the exam.
2. You may remove the last page, which contains reference data.
3. Write your name in the space above and on the backs of pages 2-6.
4. This exam is closed-everything.
5. You may use programmable calculators, but chemical data should not be stored in them.
6. You do **not** need to justify your answers unless you are explicitly told to do so.
7. You have **90 minutes** to work on this exam. (The test should take you only 60 minutes.)

#### What not to memorize (they will be provided on page 7 of the test booklet):

- (1) A periodic table showing electronegativities
- (2) Molecular orbital energy level diagrams
- (3) The information below:

$$\lambda = \frac{2L}{n} \quad \lambda = \frac{h}{mv}$$